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ABSTRACT

A course in human biology was developed to increase course options for students of all abilities and interest levels who successfully completed 1 year of high school science. Major topic areas of the course include: general plan of the human body; causes, cures, and prevention of diseases; human body chemistry; structure and function of cells, tissues, and organs; organ systems; and the influence of health and medical practices on athletic performance. This document provides: (1) the philosophy of the course; (2) the course description; (3) the course outline; (4) a list of subject proficiency requirements arranged by major topic area; (5) a table correlating these proficiencies with course scope and sequence, instructional activities and evaluation methods; (6) a list of evaluation procedures and achievement ratings; (7) a list of procedures for course evaluation and review; (8) a course evaluation form; and (9) a list of the educational goals of the Moorestown (New Jersey) Public School District. (JN)

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COURSE GUIDE

MOORESTOWN TOWNSHIP PUBLIC SCHOOLS

MOORESTOWN, NEW JERSEY 08057

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COURSE TITLE: HUMAN BIOLOGY

SCHOOL: HIGH SCHOOL

PROGRAM: SCIENCE

DATE: JULY 21, 1983

COMMITTEE MEMBERS:

Dr. Edward P. Donovan

Mr. Ralph Prickitt

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Summer Curriculum Work for New Course Offering: HUMAN BIOLOGY

I. Criteria for development of course

The Curriculum Guide which will be developed for this course will adhere to the Course Guide Outline. The specific areas that will be addressed are:

1. Course description (already completed)
2. List of specific proficiencies for the course.
3. Content outline
4. Suggested teaching strategies, including laboratory activities
5. Instructional supplies and equipment

If time is remaining after the above areas are completed, the members of the curriculum committee will spend time working on the following areas:

1. Inventory all supplies and equipment related to the course
2. Evaluate and select AV software
3. Evaluate and select microcomputer software
4. Develop evaluative instruments
5. Make the initial arrangements for acquiring guest speakers for the career education part of the course

A general description of the course content is included in the course description.

The general purpose of this of this course is to increase the the course options for students of all ability and interest levels.

The course will be designed for students who have successfully completed one year of high school science.

II. Work Plan:

Who: Dr. Edward P. Donovan
Mr. Ralph Prickitt

When: 30 hours (15 hours each) - Summer

Dates: July 1, and July 5-8 1:00-4:00 pm

Place: High School, Room C-20

GOALS

The district goals met by this course are I-IV, VI-X, XII-XIV, and XVIII-XX. These specific goals are underlined on the following attached list of "Educational Goals of the Moorestown Public School District" that was developed during 1977-1980.

EDUCATIONAL GOALS OF THE MOORESTOWN PUBLIC SCHOOL DISTRICT

I. To acquire basic skills in mathematics, language arts, obtaining information, problem solving, critical thinking, and be able to communicate information effectively.

II. To learn to enjoy the process of learning and to acquire the skills necessary for a lifetime of continuous learning and adaptation to change through creative use of various instructional methods, materials, and equipment.

III. To provide a broad educational program which creates a learning environment that fosters positive feelings toward self and others and healthy competition in order that each student may develop individual talents, interests, and skills.

IV. To acquire a stock of basic information, including knowledge about our own and other societies, an understanding of the physical and biological worlds, and familiarity with the methods of discovering new knowledge.

V. To make certain that the instructional, administrative, and support staff is of a high quality in every respect.

VI. To understand and accept himself/herself: own worth, potentialities and limitations.

VII. To insure that specialized and individualized kinds of educational experiences are available for meeting the particular needs of every student through the utilization of educational tests, individual and small group instruction, and the opportunity for students who are interested in exploring the same problem have some choice in selection of materials and opportunity to collaborate.

VIII. To acquire an understanding of ethical principles and values and the ability to apply them to his/her own life.

IX. To insure that all instruction bears a meaningful relationship to the present future needs and/or interests of students and that verbal interaction and questioning between teacher/student, student/student, be encouraged.

X. To acquire a capacity for forming satisfying relationships with a wide range of people, including those with social and cultural backgrounds different from his/her own.

XI. To acquire the ability and desire to express one's self creatively in one or more of the arts, and to appreciate the aesthetic expressions of other people.

XII. To acquire the knowledge, habits, and attitudes that promote personal and public health, both physical and mental.

XIII. To become an effective and responsible contributor to the decision-making process of the political and other institutions of the community, state, country and world through opportunities to participate in attempts to solve individual, school, and community problems.

XIV. To provide quality services for all students in the areas of academic and career planning, guidance and counseling.

XV. To insure that resources for education are used with maximum efficiency.

XVI. To insure that teachers and students have significant representation and opportunity for participation in decision-making councils that affect the operation of the school they work in.

XVII. To insure that educational experiences be determined by the utilization of the student's age, educational test results, and observations of the student functioning in the learning process.

XVIII. To acquire the knowledge, skills, and understanding that permit him/her to play a satisfying and responsible role as both producer and consumer.

XIX. To be aware of family responsibilities and to develop an understanding and appreciation of the principles of living in the family group.

XX. To develop and utilize diverse forms of constructive cooperation with parents and community groups.

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PHILOSOPHY OF THE COURSE

1. One of the major purposes of this course is to offer science courses that are consistent with the High School Science Department's newly adopted " Philosophy of Science Education" (see the attached philosophy). This course represents a trend toward offering more science courses that are useful in everyday life, that are activity-oriented, and practically-based. This course is also based on the idea that all students need to become scientifically and technologically literate.

2. Another purpose of this course is to have more courses that are better designed to meet the science needs and interests of those students that are not as academically inclined. Because this course is open to all students, it is hoped that students of various ability and interest levels that have not been in class together will be able to successfully work together in new situations.

3. A third major purpose of this course relates to the district Family Life Program. This course is consistent with and also adds to the present district Family Life Program. Therefore, it will enable students to gain an even greater understanding of their body and the factors that affect their survival and well-being.

4. Finally, it is the intention of this course to enable students to have a greater understanding of the various occupations that are related to human biology. As it is developed, this course will incorporate the outside community into its instructional activities. During the school year, the instructor will invite various representatives of community employed in human biology related occupations to speak to the students.

Statement of Philosophy of the Science Department

The members of the science department at Moorestown High feel that science is an essential component in the total education process. Science education is the link between science, technology and society. The ultimate goal of the science program at Moorestown High School is to develop scientifically and technologically literate citizens, as well as to prepare students for scientific and/or technological careers.

The science department defines a scientifically and technologically literate citizen as being able to:

1. use scientific concepts, process skills, and values in making responsible everyday decisions.
2. understand how society influences science and technology as well as how science and technology influence society.
3. recognize the limitiations as well as the usefulness of science and technology in advancing human welfare.
4. explain the major concepts, hypotheses, and theories of science and is able to use them.
5. understand that the generation of scientific knowledge depends upon the inquiry process and upon conceptual theories.
6. distinguish between scientific evidence and personal opinion.
7. recognize the origin of science and understand that scientific knowledge is tentative and subject to change as evidence accumulates.
8. understand the application of technology and the decisions entailed in the use of technology.
9. find reliable sources of scientific and technological information and use these sources in the process of decision-making.
10. appreciate the worthiness of research and technological development by having sufficient knowledge and experience in the sciences.
11. appreciate science and technology for the intellectual stimulus they provide.
12. understand that society controls science and technology through the allocation of resources.
13. have a richer and more exciting view of the world as a result of science education.

In order to enable each student in our high school to become scientifically and technologically literate, while at the same time prepare interested students for careers in science and technology, the science teachers of Moorestown High School use the following methods, principles and ideas to guide our science teaching:

1. offer courses in the fundamental earth, physical and biological sciences with emphasis on basic concepts.
2. teach the scientific process and practice it in the laboratory through experimentation and manipulation of materials.
3. have all science courses be laboratory oriented so that students will develop skills in critical observation, problem solving, and decision-making.

4. emphasize performance and responsibility on the part of the student.
5. provide instruction in a wide range of science activities, skills and concepts to meet the needs of all students.
6. offer a variety of courses to educate students of differing abilities in the major scientific concepts.
7. enable students to go beyond the science learning that occurs in the classroom through directed and independent study, and science clubs.
8. encourage students to take courses in the sciences beyond the state and school minimum requirements.
9. provide information and guidance as to the vocational application and opportunities in science and technology.

HUMAN BIOLOGY
(3 credits- 3 double periods per week, one semester)

This is a general introductory course in human biology intended for students of various interests and academic abilities. The course will provide each student with a basic understanding of: (a) the structure and function of his/her own body, and (b) the various factors that influence his/her quality of life.

The students will study the human body in both the healthy and diseased condition. Health and medical related activities and techniques (i.e., measuring lung capacity, and blood pressure, recreating an epidemic, etc.) will be integrated into the course topics. The course will use a balance of lecture/discussion and laboratory/demonstration for instruction. When available, guest speakers involved in health and medical related fields will be incorporated into the course.

The topics to be covered include: (a) the general plan of the human body, (b) causes of human disease, (c) prevention and cure of disease, (d) chemistry of the human body, (e) structure and function of cells, tissues, and organs, (f) an in depth investigation of the organ systems (i.e., digestive, nervous, skeletal, etc.), and (g) the influence of health and medical practices on athletic performance. With the approval of the instructor, all students will be expected to complete a course project related to a specific area of interest that involves human biology. This course is not to be taken in lieu of biology, chemistry, or physics by a student who will attend college. It can, however, be used as a laboratory science course for college admission. Prerequisite: successful completion of a previous biology course.

Course Outline

Human Biology

I. The General Plan of the Human Body
   - A. Organs and Organ Systems
   - B. Directions in the Body
   - C. Directions in the Body
   - D. The Metric System
   - E. The Microscope

II. Cells, Tissues, and Tumors
   - A. Cell Structure and Function
   - B. Tissue Classification
   - C. Tumors, Benign and Malignant

III. Membranes
   - A. Characteristics of Membranes
   - B. Kinds of Membranes
   - C. Epithelial Membranes
   - D. Connective Tissue Membranes
   - E. Membranes and Disease

IV. Chemistry, Matter, and Life
   - A. Molecules, Elements, Compounds, and Mixtures
   - B. Ions and Electrolytes
   - C. Acids and Bases
   - D. Radioactivity
   - E. Biochemistry

V. Body Fluids
   - A. Homeostasis
   - B. Electrolytes and Their Functions
   - C. Intake and Output of Water
   - D. Disorders Involving Body Fluids

VI. Body Temperature and Its Regulation

- A. Body Temperature and Homeostasis
- B. Heat Production
- C. Heat Loss
- D. Temperature Regulation
- E. Normal Body Temperature
- F. Abnormal Body Temperature

VII. Disease and Disease-Producing Organisms

- A. What is Disease?
- B. The Study of Disease
- C. Disease Terminology
- D. Infection
- E. The Microorganisms
- F. Parasitic Worms
- G. Microbial Control
- H. Laboratory Identification of Pathogens

VIII. The Skin in Health and Disease

- A. Structure of the Skin
- B. Functions of the Skin
- C. Observation of the Skin
- D. Skin Diseases

IX. Bones and Joints

- A. Bone - Structure and Function
- B. Landmarks of Bones
- C. Disorders of Bone
- D. The Joints and Disorders of Joints

X. The Muscular System

- A. Characteristics of Skeletal Muscle
- B. Attachments of Skeletal Muscles
- C. Disorders of Muscles

XI. The Brain, the Spinal Cord, and the Nerves

- A. Nerve - Structure and Function
- B. The Central Nervous System
- C. The Peripheral Nervous System
- D. The Autonomic Nervous System

XII. The Sensory System

- A. Senses and Sensory Mechanisms
- B. The Eye
- C. The Ear
- D. Other Organs of Special Sense
- E. General Senses

XIII. The Blood

- A. Blood Constituents
- B. Blood Clotting
- C. Blood Typing and Transfusions
- D. Blood Disorders

XIV. The Heart and Heart Disease

- A. Structure of the Heart
- B. Physiology of the Heart
- C. Heart Disease
- D. Prevention of Heart Ailments

XV. Blood Vessels and Blood Circulation

- A. Kinds of Blood Vessels
- B. Structure of Blood Vessels
- C. Names of Systemic Arteries and Veins
- D. Capillary Function
- E. Pulse and Blood Pressure
- F. Disorders Involving the Blood Vessels

XVI. The Lymphatic System and Lymphoid Tissue

- A. Lymph, Composition of
- B. Structures of Lymphoid Tissue
- C. Some Disorders of the Lymphatic System and Lymphoid Tissue

XVII. Respiration

- A. The Respiratory System
- B. The Lung Cavities
- C. Physiology of Respiration
- D. Disorders of the Respiratory System

XVIII. Digestion and Indigestion

- A. The Alimentary Canal
- B. The Accessory Structures
- C. The Peritoneum
- D. Some Practical Aspects of Nutrition

XIX. The Urinary System and Its Disorders

- A. Organs of the Urinary System
- B. Structure of the Kidneys
- C. Renal Physiology
- D. Functions of the Kidneys
- E. Kidney Disorders
- F. Dialysis Machines and Kidney Transplants

XX. Glands and Hormones

- A. Classification of Secretions and Glands
- B. Structure of Glands
- C. General Functions of Hormones
- D. Endocrine Glands and Their Hormones

XXL. Reproduction

- A. Male Reproductive System
- B. Female Reproductive System
- C. Pregnancy
- D. The Menopause

OPTIONAL

XXII. Heredity and Hereditary Diseases

- A. Congenital vs. Hereditary
- B. Chromosomes and Genes
- C. Mechanism of Gene Function
- D. Genetic Diseases
- E. Treatment and Prevention of Genetic Diseases

XXIII. Immunity, Vaccines, and Serums

- A. The Occurrence of Infection
- B. The Body's Defenses Against Disease
- C. The Processes of Immunity
- D. Kinds of Immunity
- E. Vaccines and Serums
- F. Allergy
- G. Autoimmunization
- H. Transplants and the Rejection Syndrome

SCIENCE DEPARTMENT
MOORESTOWN HIGH SCHOOL
SUBJECT PROFICIENCY REQUIREMENTS

SUBJECT: HUMAN BIOLOGY CREDITS: 6

In order to receive credit for the above subject, the student must demonstrate mastery of 60% of the following proficiencies. Each proficiency should be read as "The student should be able to.....".

THE GENERAL PLAN OF THE HUMAN BODY (Chapter 1):

1-1. list and define the major fields of study that involve the study of human biology.
1-2. diagram a typical animal cell, label the major organelles, and state a function for each.
1-3. briefly define the major human body systems by listing the structures involved, and the functions that each perform.
1-4. identify the major planes of orientation and the major cavities of the human body.
1-5. match the major organs of the human body with its appropriate body cavity.

CELLS, TISSUES AND TUMORS (Chapter 2):

2-1. describe the processes of diffusion, osmosis, filtration, and active transport.
2-2. outline the stages of cell division.
2-3. define the term tissue.
2-4. if given diagrams or descriptions, differentiate between the major kinds of animal tissue.
2-4. explain how the different tissues combine to form organs.
2-5. explain what a tumor is and distinguish between the different types.
2-6. accurately measure the size of a microscopic organism and/or cell in microns and/or micrometers.
2-7. using a microscope, identify the tissue type on a slide.

MEMBRANES (Chapter 3):

3-1. define the term membrane.
3-2. describe the major categories of membranes and list a function for each.
3-3. name and describe several major disorders or diseases, including the cause, symptoms, treatment, prevention and cure if known.

CHEMISTRY, MATTER AND LIFE (Chapter 4):

4-1. list the basic chemical constituents of the human body in decreasing order by their relative mass, and discuss their importance.
4-2. accurately determine the pH of a solution.

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BODY FLUIDS (Chapter 5):

5-1. describe the relationship between body fluids and homeostasis.
5-2. name and describe several major disorders or diseases, including the cause, symptoms, treatment, prevention and cure if known.

BODY TEMPERATURE AND ITS REGULATION (Chapter 6):

6-1. explain how heat is produced, lost and regulated by the body.
6-2. list and describe the various conditions that relate to abnormal body temperature.

DISEASE AND DISEASE PRODUCING ORGANISMS (Chapter 7):

7-1. define the term disease.
7-2. list and explain the major direct causes of human disease.
7-3. list and explain the major predisposing causes of human disease.
7-4. name and explain the most important ways that diseases are spread.
7-5. describe the major characteristics of organisms associated with human diseases.
7-6. correctly prepare and inoculate a petri dish containing culture media with microorganisms.
7-7. determine the effect of antibiotics, antiseptics and other environmental conditions on microbial growth.
7-8. using microbiological investigative techniques, determine the individual responsible for starting a simulated epidemic.

THE SKIN IN HEALTH AND DISEASE (Chapter 8):

8-1. list the major structures of the skin.
8-2. discuss the function of each major structure of the skin.
8-3. describe how the skin is involved in the regulation of body temperature.
8-4. explain the role of the skin in sensing changes in the external environment.
8-5. name and describe several major disorders or diseases, including the cause, symptoms, treatment, prevention and cure if known.

BONES AND JOINTS (Chapter 9):

9-1. list the major functions of the skeletal system.
9-2. identify the major bones of the human body from a diagram and/or a model of a skeleton.
9-3. distinguish between cartilage, bone, ligaments, and tendons.
9-4. identify the major types of skeletal joints and give an example of each type.
9-5. name and describe several major disorders or diseases, including the cause, symptoms, treatment, prevention and cure if known.

THE MUSCULAR SYSTEM (Chapter 10):

10-1. list the major functions of the muscular system.
10-2. identify the major muscles of the human body.
10-3. describe the structure of a typical skeletal muscle.
10-4. list the 4 types of muscle movement and give an example of each.
10-5. explain the function of antagonistic muscle groups.
10-6. distinguish between the structure, function, and location of the 3 major muscle tissue types.
10-7. measure the effect of exercise and practice on muscle strength and flexibility.
10-8. measure the flexibility and strength of a person using an available kit.
10-9. name and describe several major disorders or diseases, including the cause, symptoms, treatment, prevention and cure if known.

THE NERVOUS SYSTEM (Chapters 11 and 12):

11-1. trace the path of a nerve impulse through a nerve cell naming the cellular structures involved.
11-2. name and describe the major divisions of the nervous system.
11-3. describe the structure and function of the spinal cord.
11-4. identify the major parts of the brain and discuss the function of each.
11-5. explain what is meant by a reflex arc, and give several examples.
11-6. name and describe several major disorders or diseases, of the central nervous system, , including the cause, symptoms, treatment, prevention and cure if known.
12-1. name the major human sense organs.
12-2. list the major functions of each sense organ.
12-3. trace the path of sound waves through the ear to the brain.
12-4. trace the path of light waves through the eye to the brain.
12-5. perform an eye test on a person.
12-6. accurately test a person's hearing.
12-7. determine the location of taste receptors on the tongue.
12-8. determine the effect of lenses on vision.
12-9. name and describe several major disorders or diseases, of the sense organs, including the cause, symptoms, treatment, prevention and cure if known.

CIRCULATORY SYSTEM (Chapters 13,14 & 15):

13-1. list the major functions of the human circulatory system.
13-2. name the parts of the blood and state the functions of each.
13-3. distinguish between the different human blood types including both the ABO and Rh systems.

13-4. describe the different tests that are done in a complete blood study.
13-5. correctly determine the blood type (ABO and Rh) of a given blood sample.

13-6. determine blood clotting time and bleeding time of an individual.
13-7. correctly prepare and stain a blood smear slide.
13-8. determine a person's blood type using a saliva blood typing kit.
13-9. name and describe several major disorders or diseases, of the blood, including the cause, symptoms, treatment, prevention and cure if known.
14-1. describe the influence of chemical and physical factors on the heartbeat rate.
14-2. given a preserved heart or a heart model, identify the major structures and explain a function of each.
14-3. name and describe several major disorders or diseases, of the heart, including the cause, symptoms, treatment, prevention and cure if known.
15-1. distinguish between veins, arteries, and capillaries.
15-2. trace the path of a blood cell, naming the structures the blood cell would come in contact with and discussing the changes that would occur, from its initial entry into the heart and its eventual return to the same place.
15-3. describe the causes of blood pressure and the ways the body maintains normal blood pressure.
15-4. using a student blood pressure set, correctly measure the blood pressure of a person.
15-5. determine the pulse rate of a person under various environmental conditions.
15-6. name and describe several major disorders or diseases, of the blood vessels, including the cause, symptoms, treatment, prevention and cure if known.

THE LYMPHATIC SYSTEM AND LYMPHOID TISSUE (Chapter 16):

16-1. describe the principal functions of the lymphatic system.
16-2. distinguish between lymph and plasma fluid.
16-3. name the principal lymphatic organs and explain their function.
16-4. discuss the relationship between the lymphatic system and immunity.
16-5. name and describe several major disorders or diseases, including the cause, symptoms, treatment, prevention and cure if known.

RESPIRATION (Chapter 17):

17-1. define and describe the process of breathing.
17-2. distinguish between breathing and respiration.
17-3. list the major functions of the respiratory system.
17-4. trace the path of a molecule of oxygen through the human respiratory system until it eventually enters cells and the path of carbon dioxide leaving the body from the the cells.
17-5. describe how sound production occurs in the human body (larynx).
17-6. measure the vital lung capacity and tidal lung volume of an individual.
17-7. correctly demonstrate the Heimlich maneuver - a simple procedure for dislodging food from the trachea.

17-8. measure the carbon dioxide level of exhaled air under various levels of physical activity.
17-9. determine the basal metabolic rate of a person.
17-10. name and describe several major disorders or diseases, including the cause, symptoms, treatment, prevention and cure if known.

DIGESTION AND INDIGESTION (Chapter 18):

18-1. list the five major classes of nutrients and explain their purpose.
18-2. describe the importance of enzymes to digestion.
18-3. explain what is meant by a deficiency disease and give several examples.
18-4. describe the structure, function and development of teeth.
18-5. explain the major purposes of digestion.
18-6. trace the path of a food particle through the human digestion system naming the structures involved and the changes that occur to the food particle until it is passed out as waste.
18-7. determine the effect of enzymes on food digestion.
18-8. analyze a person's diet for a 24-hour period to determine the nutritional value.
18-9. name and describe several major disorders or diseases, including the cause, symptoms, treatment, prevention and cure if known.

THE URINARY SYSTEM AND ITS DISORDERS (Chapter 19):

19-1. list and describe the major organs of excretion.
19-2. name the major parts of the urinary system.
19-3. state the functions of the urinary system.
19-4. describe the anatomy and physiology of the kidney.
19-5. perform the tests routinely used in urinalysis.
19-6. name and describe several major disorders or diseases, including the cause, symptoms, treatment, prevention and cure if known.

GLANDS AND HORMONES (Chapter 20):

20-1. distinguish between a duct gland and a ductless gland.
20-2. name the major ductless glands and discuss their primary function.
20-3. name and discuss the function of the major hormones.
20-4. name and describe several major disorders or diseases, including the cause, symptoms, treatment, prevention and cure if known.

REPRODUCTION (Chapter 21):

21-1. identify the structure of both the male and female reproductive organs.
21-2. explain the function of the reproductive organs for both sexes.
21-3. list the changes that occur during the ovarian and menstrual cycles.
21-4. describe the process involved in the development of the fertilized egg to the birth of the new individual.

21-5. graph the changes that occur in the concentrations of female reproductive hormones during the menstrual cycle.
21-6. name and describe several major disorders or diseases, including the cause, symptoms, treatment, prevention and cure if known.

GENERAL LABORATORY RELATED PROFICIENCIES:

G-1. dissect an adult white rat and identify the major anatomical structures. (required for all students). (Chapters 1, 3, 8-21)
G-2. complete a major course project involving some aspect of human biology (required for all students).
G-3. interpret data, charts and graphs.
G-4. carry out laboratory activities and be able to explain the procedures, observations, results, and conclusions orally or in writing.
G-5. perform correct measurements using metric instruments.
G-6. correctly maintain and care for a microscope.
G-7. correctly prepare a wet mount slide.
G-8. accurately focus a compound microscope, given a prepared slide.

OPTIONAL COURSE PROFICIENCIES

HEREDITY AND HEREDITARY DISEASES (Chapter 22):

22-1. explain the basis of sex determination and sex-linked traits in humans.
22-2. explain the principles of inheritance in humans.
22-3. identify some human characteristics that are inherited and determine whether they are dominant or recessive traits.

IMMUNITY, VACCINES AND SERUMS (Chapter 23):

23-1. describe the major methods used in disease prevention.
23-2. describe the major methods used to cure disease.
23-3. explain how the human body defends itself against disease.

Human Biology Lab Activities

I. Human Body - General Plan
   1 Basic Body Plan - Chapter 1 MHP*
   2 The Structure and Function of Compound Microscope - BSCS*Yellow or Blue
   3 Microscopic Measurement - BSCS Yellow or Blue
   4 Metric Measurement - BLS*

II. Cells, Tissues and Tumors
   1 Cellular Function and Structure - Chapter 3 MHP
   2 Intercellular Organization - Chapter 4 MHP

III. Membranes

IV. Chemistry, Matter and Life
   1 Principles of Chemistry - Chapter 2 MHP
   2 Acids, Bases and Cells - Inquiry 6-1 BSCS Yellow

V. Body Fluids

VI. Body Temperature and Regulation
   1 Regulation of Body Temperature - Chapter 24 MHP

VII. Disease and Disease-Producing Organisms
   1 An Epidemic - #19 Lab Manual for Microbiology, Mangino, Rich; Weston Welch, Publisher
   2 Microbiological Techniques - Inquiry 9 - 1 BSCS Yellow
   3 A Disease of Bacteria - Inquiry 9 - 2 BSCS Yellow
   4 Destribution of Microorganisms - Inquiry 10 - 1 BSCS Yellow
   5 Staining and Observing Vacterial Cells - Inquiry 10 - 2 BSCS Yellow
   6 Antibiotics and Bacterial Growth - #46 BLS

VIII. Skin in Health and Disease

IX. Bones and Joints
   1 Skeleton and The Framework - Chapter 5 MHP

X. The Muscular System
   1 Muscle Tissue - Chapter 6 MHP
   2 Skeletal Tissue - Chapter 7 MHP

XI. The Brain, Spinal Cord and Nerves
   1 Nervous Tissue - Chapter 8 MHP
   2 The Nervous System - Chapter 9 MHP
   3 The Reflex Arc - #72 BLS

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*MHP - Modern Human Physiology

BLS - Biology Living Systems

BSCS - Biological Science Curriculum Study

XII. The Sensory System
1 The Ears - Hearing and Equilibrium - Chapter 11 MHP
2 Vision and other Senses #44 BLS
3 The Eye #71 BLS
4 Reliability of your Visual Sense 373 BLS

XIII. The Blood
1 Blood Smear - Chapter 20 (Part A) MHP
2 Blood Types and Circulation #42 BLS
3 Blood #64 BLS

XIV. The Heart and Heart Disease
1 Structure of Heart (Chapter 20, Part B) MHP
2 The Human Heart #63 BLS

XV. Blood Vessels and Blood Circulation
1 Heart Physiology Chapter 20, Part C) MHP
2 Influencing Human Pulse Rate #21 MHP

XVI. The Lymphatic System and Lymphatic Tissue
1 The Lymph System - Chapter 22 MHP

XVII. Respiration
1 The Mechanics of Breathing - Chapter 17 MHP
2 The Respiratory and Barometric Physiology - Chapter 18 MHP
3 Regulation of Your Breathing Rate - Inquiry 22 - 1 BSCS Yellow
4 Lung Capacity and CO_2 Production #43 BLS
5 Lung Capacity #65 BLS

XVIII. Digestion and Indigestion
1 Mouth, Pharnyx, Esophagus - Chapter 13 MHP
2 Stomach - Chapter 14 MHP
3 Intestine - " 15 MHP
4 Metabolism - " 25 MHP
5 Fat Digestion - #61 BLS

XIX. The Urinary System and Its Disorders
1 The Kidney - Chapter 26 MHP
2 Urinalysis - #66 BLS

XX. Glands
1 Specific Endocrine Glands - Chapter 28 MHP
2 The Thyroid Gland #69 BLS

XXI. Reproduction
1 Reproduction and Development - Chapter 29 MHP
2 The Menstrual Cycle #57 BLS

OPTIONAL
XXII. Heredity and Hereditary Disease
1 Human Genetics - Chapter 30 MHP

XXIII. Immunity, Vaccines and Serums

PROFICIENCY CODE	SCOPE AND SEQUENCE	INSTRUCTIONAL ACTIVITIES	EVALUATION OF PROFICIENCIES AND CLASSWORK
1-1 to 1-5 (G-3 to G-8)	Chapter 1 - Textbook The General Plan of the Human Body	Read Chapter 1 Answer Chapter 1 Questions Complete Lab Activities I-1 to I-4 Videotape "The Incredible Machine"	Chapter test - Teacher made Quizzes Homework Questions Lab reports
2-1 to 2-7 (G-3 to G-8)	Chapter 2 - Textbook Cells, Tissues and Tumors	Read Chapter 2 Answer Chapter 2 Questions Complete Lab Activities II-1, II-2	Chapter test Quizzes Homework Questions Lab reports
3-1 to 3-3	Chapter 3 - Textbook Membranes	Read Chapter 3 Answer Chapter Questions	Chapter test Quiz Homework Questions
4-1 to 4-2 (G-3 to G-5)	Chapter 4 - Textbook Chemistry, Matter and Life	Read Chapter 4 Answer Chapter 4 Questions Complete Lab Activites IV-1, IV-2	Chapter test Quiz Homework Questions Lab reports
5-1, 5-2	Chapter 5 - Textbook Body Fluids	Read Chapter 5 Answer Chapter 5 Questions	Chapter test Quizzes Homework Questions
6-1, 6-2 (G-3 to G-5)	Chapter 6 - Textbook Body Temperature and its Regulation	Read Chapter 6 Answer Chapter 6 Questions Lab Activity VI-1	Chapter test Quizzes Homework Questions Lab report
7-1 to 7-8 (G-3 to G-8)	Chapter 7 - Textbook Disease and Disease Producing Organisms	Read Chapter 7 Answer Chapter Questions Lab Activities VII-1 to VII-6	Chapter Test Quizzes Homework Questions Lab reports

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PROFICIENCY CODE	SCOPE AND SEQUENCE	INSTRUCTIONAL ACTIVITIES	EVALUATION OF PROFICIENCIE AND CLASSWORK
8-1 to 8-5	Chapter 8 - Textbook The Skin in Health and Disease	Read Chapter 8 Answer Chapter 8 Questions Videotape "The Sense of Touch"	Chapter test Quizzes Homework Questions
9-1 to 9-5 (G-3 to G-8)	Chapter 9 - Textbook Bones and Joints	Read Chapter 9 Answer Chapter 9 Questions Lab Activity IX-1	Chapter Test Quizzes Homework Questions Lab report
10-1 to 10-9 (G-3 to G-8)	Chapter 10 - Textbook The Muscular System	Read Chapter 10 Answer Chapter 10 Questions Lab Activities X-1, X-2	Chapter test Quizzes Homework Questions Lab reports
	SECOND MARKING PERIOD		
11-1 to 11-6 (G-3 to G-8)	Chapter 11 - Textbook The Brain, Spinal Cord and Nerves	Read Chapter 11 Answer Chapter Questions Lab Activities XI-1 to XI-3 Videotape "The Vital Connection"	Chapter test Quizzes Homework Questions Lab reports
12-1 to 12-9 (G-3 to G-8)	Chapter 12 The Sensory System	Read Chapter 12 Answer Chapter Questions Lab Activities XII-1 to XII-4 Videotape "The Magic Sense"	Chapter test Quizzes Homework Questions Lab reports
13-1 to 13-9 (G-3 to G-8)	Chapter 13 The Blood	Read Chapter 13 Answer Chapter 13 Questions Lab Activities XIII-1 to XIII-3	Chapter test Quiz Homework Questions Lab reports
14-1 to 14-3 (G-3 to G-8	Chapter 14 The Heart and Heart Disease	Read Chapter 14 Answer Chapter 14 Questions Lab Activities XIV-1, XIV-2 Videotape "Portrait of a Killer"	Chapter test Quiz Homework Questions Lab reports

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PROFICIENCY CODE	SCOPE AND SEQUENCE	INSTRUCTIONAL ACTIVITIES	EVALUATION OF PROFICIENCIE AND CLASSWORK
15-1 to 15-6 (G-3 to G-8)	Chapter 15 - Textbook Blood Vessels and Blood Circulation	Read Chapter 15 Answer Chapter 15 Questions Lab Activities XV-1, XV-2	Chapter Test Quiz Homework Questions Lab reports
16-1 to 16-5	Chapter 16 - Textbook The Lymphatic System and Lymphoid Tissue	Read Chapter 16 Answer Chapter 16 Questions Lab Activity XVI-1	Chapter Test Quiz Homework questions Lab report
17-1 to 17-10	Chapter 17 - Textbook Respiration	Read Chapter 17 Answer Chapter 17 Questions Lab Activity XVII-1 to XVII-5	Chapter Test Quiz Homework Questions Lab reports
18-1 to 18-9 (G-3 to G-8)	Chapter 18 - Textbook Digestion and Indigestion	Read Chapter 18 Answer Chapter 18 Questions Lab Activities XVIII-1 to XVIII-5	Chapter test Quiz Homework Questions Lab reports
19-1 to 19-2	Chapter 19 - Textbook The Urinary System and Its Disorders	Read Chapter 19 Answer Chapter 19 Questions Lab Activities XIX-1, XIX-2 Videotape "The Kidney and Homeostasis"	Chapter test Quiz Homework Questions Lab reports
20-1 to 20-4 (G-3 to G-8)	Chapter 20 - Textbook Glands and Hormones	Read Chapter 20 Answer Chapter 20 Questions Lab Activities XX-1, XX-2	Chapter test Quiz Homework Questions Lab reports
21-1 to 21-6 (G-3 to G-8)	Chapter 21 - Textbook Reproduction	Read Chapter 21 Answer Chapter 21 Questions Lab Activities XXI-1, XXI-2	Chapter test Quiz Homework Questions Lab reports

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PROFICIENCY CODE	SCOPE AND SEQUENCE	INSTRUCTIONAL ACTIVITIES	EVALUATION OF PROFICIENCIES AND CLASSWORK
G-1	Chapters 1, 3, 8 - 21 Textbook	Lab dissection of white rat	Lab practical exam Lab quizzes
G-2	End of the year course project	Course Project - 9th period activity or outside of class	Course Project report
1-1 to 21-6		REVIEW	FINAL EXAM

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EVALUATION PROCEDURES: Students' grades will be determined by the following:

1. Quizzes
2. Tests
3. Homework (readings & written)
4. Laboratory work
5. Laboratory reports/notebook
6. Written and/or oral reports
7. Classroom participation
8. Notebook
9. Projects
10. Final examination (departmental)

EVALUATION OF CLASSWORK:

A student's classwork is a basic determinant in grades assigned. This includes the quality and quantity of such factors as verbal and physical participation, preparedness, attentiveness, conduct, and attendance, as each contributes to the individual's progress within the classroom. Students are expected to attend ALL classes. Excessive absences of any kind will certainly be reflected in the "class participation" portion of a student's marking period grade. (Refer to "Excessive Absences" in the Student-Parent Handbook).

ACHIEVEMENT RATINGS: Student achievement shall be rated by letters with the following significance:

A - High Achievement
B - Above Average
C - Average
D - Below Average
E - Failure

NC - No Credit
P - Pass
F - Fail
WF - Withdrew Failing
WP - Withdrew Passing

PROCEDURES FOR COURSE EVALUATION AND REVIEW

Evaluation of the success of the course, and the plan for improving the course is discussed in the following statements:

1. Each students' progress in meeting the proficiencies, which is a way of determining success of the course, will be determined by teacher observation and evaluation of the quality of his/her students' laboratory work and reports, projects, discussions, notebook, written homework, written tests and quizzes, class participation, and success on the final examination.
2. Using a course evaluation form developed to survey student observations and opinions about a particular class, each student will have the opportunity to evaluate the course and the instructor at the end of the semester. (See the attached "Course Evaluation Form")
3. Using a less structured form than the one mentioned in #2, the students will have the opportunity to do a self-evaluation of their successes and failures.
4. The instructor will be constantly monitoring course successes and failures so that improvements in the approach, proficiencies, activities and course outline can be made before the course is offered again.
5. If it is necessary, the instructor will apply for curriculum funding for Summer, 1984 in order to make the necessary course improvements.

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COURSE EVALUATION FORM

Please make all your comments as honestly as possible and DO NOT sign your name. YOUR COMMENTS MUST REMAIN ANONYMOUS.

Name of the course:

Name of the teacher:

Please answer the following questions by circling the appropriate number.

1. My class standing is: (1) Freshman (9th) (2) Sophomore (10th) (3) Junior (11th) (4) Senior (12th).

2. My present high school average is: (1) A (2) B (3) C (4) D (5) E.

3. The grade that I expect to earn in this course is: (1) A (2) B (3) C (4) D (5) E.

4. This course was required (1) Yes (2) No.

5. The teacher spoke clearly and audibly (1) always (2) most of the time (3) some of the time (4) occasionally (5) rarely.

6. The teacher's class presentations were clear and well organized: (1) always (2) mostly (3) some of the time (4) occasionally (5) rarely.

7. The teacher's manner of presentation made note taking easy. (1) absolutely true (2) mostly true (3) sometimes (4) occasionally true (4) not usually true (5) absolutely untrue.

8. The teacher's ability to give information to the student concerning his/her performance to increase learning was: (1) excellent (2) good (3) average (4) poor (5) very poor.

9. The ability of the teacher to stimulate the interests of the students for the course was: (1) excellent-the teacher stimulated much interest in the students (2) good (3) average (4) poor (5) very poor.

10. The teacher's preparation for the course was: (1) excellent- very prepared (2) good (3) average (4) poor (5) very poor-not prepared at all.

11. The teacher's use of classroom time was (e.g., class began and ended on time): (1) excellent-very efficient (2) good (3) average (4) poor (5) very poor-much time was wasted.

12. The teacher's interest in and availability to the student (especially during ninth period) was: (1) exceptional-high interest, high availability (2) good (3) moderate (4) poor (5) very poor-no interest, impossible to see.

13. The teacher's willingness to respond to questions asked during class was: (1) excellent-always answered student's questions (2) good (4) poor, 5) very poor-avoided student's questions.

14. The teacher's presentation of the course proficiencies, goals, and grading procedures were: (1) very clear (2) clear (3) O.K. (4) unclear.

15. I felt that the classroom activities were generally: (1) way over my head (2) a little complex (3) just at the right level (4) somewhat beneath my level of understanding (5) well beneath my level of understanding.

16. The classroom activities were: (1) well balanced-using a mixture of laboratory activities, discussions, lectures, demonstrations, etc., (2) moderately balanced-using many activities, but some used much more than others (3) not balanced-emphasizing one type of activity much more than the others.

17. The teacher used helpful and practical examples to clarify difficult concepts: (1) most of the time (2) many times (3) occasionally (4) rarely (5) never.

18. The ability of the teacher to establish and maintain a good relationship with the students during class was: (1) excellent-fine working relationship with students (2) good (3) adequate (4) not very good (5) poor.

19. The ability of the teacher to intertwine the various aspects of the course (examples: demonstrations, lab activities, discussions, homework, reading, testing, etc.) was: (1) excellent (2) good (3) average (4) poor (5) very poor.

20. The readability of the textbook was: (1) very good (2) good (3) average (4) on the hard side (5) awful.

21. Did the material covered in the tests and quizzes meet the objectives of the course, that is, were the tests and quizzes fair? (1) yes, absolutely (2) for the most part, yes (3) absolutely not.

22. Compared to other courses, this course: (1) required more time (2) was somewhat more time consuming (3) was about average in time required (4) took less time than most other courses (5) was a breeze.

23. Do you feel that this course added significantly to your knowledge and appreciation of the subject? (1) very much so (2) yes (3) somewhat (4) not especially (5) not at all.

24. Your overall rating of the course is: (1) excellent-a very valuable learning experience (2) good (3) average (4) poor (5) very poor-a waste of time.

25. Would you take another course from this teacher: (1) very much so (2) yes (3) maybe (4) only if I had to (5) absolutely not.

ADDITIONAL COMMENTS:

I. Textbook and Lab Manuals

The Human Body in Health and Disease, 5th Edition, Ruth Memmler and Dena Wood, J. B. Lippincott Company, Phila., Pa., 1983

Experiments in Modern Human Physiology, 5th Edition, Cornett and Gratz, Holt, Rinehart & Winston, Publishers, New York, N. Y. 1982

Laboratory Anatomy of The White Rat, Chiasson, 1975
Wm. C. Brown Company, 1975

II. References

Human Anatomy and Physiology, Solomon & Davis, P. William Saunders College Publishing, Phila., Pa., 1983

Anatomy and Physiology, 3rd Edition, Evans, William F., Prentice-Hall, Inc., Englewood Cliffs, N.J. 1983

The Human Organism, 5th Edition, DeCoursey & Renfro, McGraw-Hill Book Co., New York, 1980

Modern Human Physiology, 5th Edition, Cornett & Gratz, Holt, Rinehart & Winston, New York, 1983

Essential Human Anatomy and Physiology, 2nd Edition, Landau, Scott, Foresman and Company, Glenview, Illinois, 1980

Encyclopedia and Dictionary of Medicine, Nursing, and Allied Health, 3rd Edition, Miller & Keane, W. B. Saunders Company, Phila., Pa 1983

Gray's Anatomy, 29th Edition, Henry Gray, Lea & Febiger, Phila., Pa. 1973

Workbook for the Human Body in Health and Disease, 5th Edition, Memmler and Wood, J.B. Lippincott Co., Phila., Pa. 1983

Study Guide to Accompany Human Anatomy and Physiology, Davis & Solomon, Saunders College Publishing, Phila., Pa. 1983

Study Guide to Accompany Essential Human Anatomy and Physiology, 2nd Ed., Wiebers and Rogers, Scott, Foresman & Company, Glenview, Ill., 1980

Atlas of Descriptive Histology, 2nd Edition, Reith & Ross, Harper and Row, Hagerstown, Md., 1970

A Textbook of Histology, 10th Edition, Bloom & Faucett, W.B. Saunders Company, Phila., Pa. 1975

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III. Equipment

Microscope, Compound

Articulated Skeleton

Human Sexless Torso (Model)

Human Heart (Model)

Human Kidney (Model)

Thin Man (Plastic Overlay - Illustrated)

Inner Ear (Model)

The Eye (Model)

Human Skill

Spirometer (Dry)

IV. Audio-Visual

The Kidney and Homeostasis (Single Concept Inquiry Film Loop)
Houghton Mifflin Co., Boston, Mass.

"The Magic Sense" — The Eye, The Body Human Series (Videotape)

"The Sense of Touch" NOVA, (Videotape)

"The Vital Connection" — The Brain and Nervous System,
The Body Human Series (Videotape)

"The Incredible Machine" The Body Human Series, (Videotape)

"Portrait of a Killer" — Heart Disease, NOVA, (Videotape)

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HUMAN BIO SUPPLY ORDERS 83/84

COMPANY	ITEM TYPE	QUANTITY	ITEM DESCRIPTION	CATALOG NUMBER	UNIT PRICE	TOTAL PRICE
CAROLINA	EQUIP	1 UNITS	PORTABLE DRY SPIROMETER	69-2670	79.95	79.95
	SS	1 CS	DISPOSABLE PETRI DISHES, POLYSTYRENE, STERILE 100 X 15MM 500/CASE	74-1350	63.90	63.90
		1 EA	DISPOSABLE GLOVES 100/BOX	70-6346	5.30	5.30
		2 DOZ	LABORATORY APRONS-MEDIUM 27"WX42"L	70-6262	26.80	53.60
		1 PKG	REPLACEMENT MOUTHPIECE	69-2672	4.95	4.95
		4 SETS	CLASSROOM BLOOD PRESSURE SET	69-1090	26.45	105.80
		1 EA	REPLACEMENT FILTER DISCS	69-2581	5.50	5.50
		4 SETS	FEVER DETECTOR SET	69-5675	4.50	18.00
		1 EA	WRITE ON LABEL DISPENSER	65-7220	19.50	19.50
		2 ROLLS	WRITE ON LABEL TAPE	65-7216	4.42	8.84
	SSBOOKS	25 BKS	LABORATORY ANATOMY OF THE WHITE RAT ECONOMY ED. CHIASSON 1975	45-5441	3.45	86.25
	SSDISS	2 DOZ	WHITE RATS-PRESERVED IN CARO-SAFE 7-9" DOUBLE INJECTED	PC-1877	43.00	86.00
	SSKIT	1 KIT	ABO AND RH KIT-BLOOD TEST	70-4075	24.25	24.25
		2 EA	BLOOD SMEAR AND CLOTTING KIT	70-4079	15.50	31.00
		1 KIT	HUMAN SENSES BIO KIT	69-4506	24.95	24.95
		1 KIT	SIGHT AND SOUND KIT	69-4510	44.95	44.95
		1 KIT	SMOKING EXPERIMENT KIT	69-2580	19.00	19.00
		1 KIT	BREATHING FITNESS KIT	69-2600	59.95	59.95
		1 KIT	FLEXIBILITY AND STRENGTH KIT	69-6570	69.95	69.95
	SSLIV	1 TUBE	SERRATIA MARCESCENS LIVING CULTURE **HOLD FOR CALL**	15-5450	4.20	4.20

HUMAN BIO SUPPLY ORDERS 83/84

COMPANY	ITEM TYPE	QUANTITY	ITEM DESCRIPTION	CATALOG NUMBER	UNIT PRICE	TOTAL PRICE
					TOTAL:	815.84
FISHER SCIENTIFIC	SSKIT	1 KIT	BLOOD TYPING VIA SALIVA KIT	S25080	38.00	38.00
					TOTAL:	38.00
SARGENT	S	1 PAIR	GLOVES-ZETEX-LONG, LINED	S-40257-10	36.75	36.75
	S-KIT	1 SET	PULMONARY SYSTEM STUDY SET	9737	105.50	105.50
					TOTAL:	142.25
					TOTAL:	996.09